

TABLE 7-1

Correct answers to questions about basic facts in physical science and biological science, by country or economy: Most recent year

(Percent)

Question	United States (2018, n = 1,175) ^a	Canada (2013, n = 2,004)	China (2015, n = 70,400)	EU (2005, n = 24,896)	India (2004, n = 30,255)	Israel (2016, n = 501)	Japan (2011, n = 812 and 984) ^b	Malaysia (2014, n = 2,653)	Russia (2003, n = 2,107)	South Korea (2004, n = 1,000)	Switzerland (2016, n = 1,000)
Physical science											
Questions used to calculate the average factual knowledge measure ^c											
<i>The center of the Earth is very hot. (True)</i>	86	93	47	86	57	86	84	75	na	87	na
<i>The continents on which we live have been moving their locations for millions of years and will continue to move in the future. (True)</i>	79	91	51	87	32	86	89	62	40	87	80
<i>Does the Earth go around the Sun, or does the Sun go around the Earth? (Earth around Sun)^d</i>	72	87	na	66	70	86	na	85	na	86	na
<i>All radioactivity is man-made. (False)</i>	68	72	41	59	na	76	64	20	35	48	na
<i>Electrons are smaller than atoms. (True)</i>	46	58	22	46	30	60	28	35	44	46	39
<i>Lasers work by focusing sound waves. (False)</i>	44	53	19	47	na	67	26	30	24	31	na
Other questions											
<i>The universe began with a huge explosion. (True)^e</i>	38	68	na	na	34	64	na	na	35	67	na
Biological science											
Questions used to calculate the average factual knowledge measure ^c											
<i>It is the father's gene that decides whether the baby is a boy or a girl. (True)^f</i>	59	na	49	64	38	72	26	45	22	59	60
<i>Antibiotics kill viruses as well as bacteria. (False)^g</i>	50	53	24	46	39	53	28	16	18	30	56
Other questions											

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<i>Human beings, as we know them today, developed from earlier species of animals.</i> (True) ^h	49	74	68	70	56	63	78	na	44	64	na

na = not applicable; data were not collected for this question in that country.

EU = European Union.

^a See Table S7-25 for U.S. trends.^b Numbers for Japan are the average from two studies conducted in 2011.^c Questions are among the nine used to calculate the average factual knowledge measure (eight appear in this table; see Table S7-26 for data on all nine questions over time).^d The question *How long does it take for the Earth to go around the Sun?* (One year) was asked only if the respondent answered correctly that the Earth goes around the Sun.^e An experiment in the 2012 General Social Survey showed that adding the preface "according to astronomers" increased the percentage correct from 39% to 60%.^f In 2008, the statement was *It is the mother's gene that decides whether the baby is a boy or a girl.* (False) (Split ballot in 2008; 1,506 survey respondents were asked about "father's gene"; 515 survey respondents were asked about "mother's gene.") The China, EU, and Switzerland surveys asked about "mother's gene" instead of "father's gene." The Israel survey asked about "hereditary material from the father."^g The Japan survey asked about "antibodies" instead of "antibiotics."^h An experiment in the 2012 General Social Survey showed that adding the preface "according to the theory of evolution" increased the percentage correct from 48% to 72%.**Note(s)**

Responses of "don't know" and refusals to respond count as incorrect and are not shown. EU data include Austria, Belgium, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, and the United Kingdom but do not include Bulgaria and Romania.

Source(s)United States—NORC at the University of Chicago, General Social Survey (2018); Canada—Council of Canadian Academies, Expert Panel on the State of Canada's Science Culture, *Science Culture: Where Canada Stands* (2014); China—Chinese Association for Science and Technology/China Research Institute for Science Popularization, Chinese National Survey of Public Scientific Literacy (2015); EU—European Commission, Eurobarometer 224/Wave 63.1: Europeans, Science and Technology (2005); India—National Council of Applied Economic Research, National Science Survey (2004); Israel—Israeli Ministry of Science, Technology and Space, Geocartography Knowledge Group, Perceptions and Attitudes of the Israeli Public about Science, Technology and Space (2016); Japan—National Institute of Science and Technology Policy/Ministry of Education, Culture, Sports, Science and Technology, Survey of Public Attitudes Toward and Understanding of Science and Technology in Japan (2011); Malaysia—Malaysian Science and Technology Information Centre/Ministry of Science, Technology and Innovation, Survey of Public Awareness of Science, Technology and Innovation: Malaysia (2014); Russia—Gokhberg L, Shuvalova O, *Russian Public Opinion of the Knowledge Economy: Science, Innovation, Information Technology and Education as Drivers of Economic Growth and Quality of Life*, British Council, Russia (2004), Fig. 7; South Korea—Korea Science Foundation (now Korea Foundation for the Advancement of Science and Creativity), Survey of Public Attitudes Toward and Understanding of Science and Technology (2004); Switzerland—University of Zurich, Institute of Mass Communication and Media Research, Department of Science, Crisis, and Risk Communication, Science Barometer Switzerland (2016).